



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2021-0509; Project Identifier AD-2021-00608-E; Amendment 39-21626; AD 2021-11-51]

RIN 2120-AA64

Airworthiness Directives; International Aero Engines AG Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain International Aero Engines AG (IAE) V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, and V2533-A5 model turbofan engines. This AD was prompted by a review of investigative findings from an event involving an uncontained failure of a high-pressure turbine (HPT) 1st-stage disk that resulted in high-energy debris penetrating the engine cowling. This AD requires an ultrasonic inspection (USI) of affected HPT 1st-stage disks and HPT 2nd-stage disks and, depending on the results of the USI, removal of the affected HPT 1st-stage and HPT 2nd-stage disks from service. The FAA previously sent an emergency AD to all known U.S. owners and operators of these engines and is now issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]. Emergency AD 2021-11-51, issued on May 21, 2021, which contained the requirements of this amendment, was effective with actual notice.

The Director of the Federal Register approved the incorporation by reference of certain publications identified in this AD as of July 13, 2021 (86 FR 30380, June 8, 2021).

The FAA must receive comments on this AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: (202) 493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this final rule, contact: International Aero Engines AG, 400 Main Street, East Hartford, CT 06118; phone: (860) 565-2391; email: help24@pw.utc.com; website: <http://fleetcare.pw.utc.com>. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759. It is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0509.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0509; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The street address for Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: Alberto Hernandez, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7329; fax: (781) 238-7999; email: Alberto.J.Hernandez@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

On May 21, 2021, the FAA issued Emergency AD 2021-11-51 (the emergency AD), which requires a USI of affected HPT 1st-stage disks and HPT 2nd-stage disks

installed on IAE V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, and V2533-A5 model turbofan engines and, depending on the results of the USI, removal of the affected HPT disks from service. The FAA sent the emergency AD to all known U.S. owners and operators of these engines. That action was prompted by a review of investigative findings from an event involving an uncontained failure of an HPT 1st-stage disk that resulted in high-energy debris penetrating the engine cowling. This condition, if not addressed, could result in uncontained HPT failure, release of high-energy debris, damage to the engine, damage to the airplane, and loss of the airplane.

FAA's Determination

The FAA is issuing this AD because the agency evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Related Service Information under 1 CFR part 51

The FAA reviewed IAE Non-Modification Service Bulletin (NMSB) V2500-ENG-72-0713, Revision 1, dated January 26, 2021 (IAE NMSB V2500-ENG-72-0713). IAE NMSB V2500-ENG-72-0713 specifies procedures for performing an ultrasonic inspection of the HPT 1st-stage disk and the HPT 2nd-stage disk installed on IAE V2500-A5 and V2500-D5 series engines.

The FAA also reviewed IAE NMSB V2500-E5-72-0015, dated December 15, 2020 (IAE NMSB V2500-E5-72-0015). IAE NMSB V2500-E5-72-0015 specifies procedures for performing an ultrasonic inspection of the HPT 1st-stage disk and the HPT 2nd-stage disk installed on V2500-E5 series engines.

The Director of the Federal Register approved IAE NMSB V2500-ENG-72-0713 and IAE NMSB V2500-E5-72-0015 for incorporation by reference as of July 13, 2021 (86 FR 30380, June 8, 2021). This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

AD Requirements

This AD requires a USI of affected HPT 1st-stage disks and HPT 2nd-stage disks installed on IAE V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-

A5, and V2533-A5 model turbofan engines and, depending on the results of the USI, removal of the affected HPT disks from service.

Interim Action

The FAA considers this AD interim action. The root cause of this event is still under investigation.

Justification for Immediate Adoption and Determination of the Effective Date

Section 553(b)(3)(B) of the Administrative Procedure Act (APA) (5 U.S.C. 551 *et seq.*) authorizes agencies to dispense with notice and comment procedures for rules when the agency, for “good cause,” finds that those procedures are “impracticable, unnecessary, or contrary to the public interest.” Under this section, an agency, upon finding good cause, may issue a final rule without providing notice and seeking comment prior to issuance. Further, section 553(d) of the APA authorizes agencies to make rules effective in less than thirty days, upon a finding of good cause.

An unsafe condition exists that required the immediate adoption of Emergency AD 2021-11-51, issued on May 21, 2021, to all known U.S. owners and operators of these engines. The FAA has found that the risk to the flying public justified forgoing notice and comment prior to adoption of this rule.

On March 18, 2020, an Airbus Model A321-231 airplane, powered by IAE V2533-A5 model turbofan engines, experienced an uncontained HPT 1st-stage disk failure that resulted in an aborted takeoff. The uncontained failure of the HPT 1st-stage disk resulted in high-energy debris penetrating the engine cowling. The FAA published Emergency AD 2020-07-51 on March 21, 2020 (followed by publication in the Federal Register on April 13, 2020, as a Final Rule, Request for Comments (85 FR 20402)), to remove from service HPT 1st-stage disks identified as having the highest risk of failure. Based on a review of investigative findings performed since that event, the manufacturer has identified a different population of affected HPT 1st-stage and HPT 2nd-stage disks that are affected by the same unsafe condition and require USI and, depending on the results of the USI, removal from service.

The FAA considers removal of high-risk HPT 1st-stage and 2nd-stage disks to be

an urgent safety issue. The USI of the affected HPT disks must be accomplished within 10 flight cycles after the effective date of this AD to identify HPT 1st-stage and 2nd-stage disks at risk of failure and to maintain an acceptable level of safety. This unsafe condition may result in loss of the airplane. These conditions still exist, and therefore, notice and opportunity for prior public comment are impracticable and contrary to public interest pursuant to 5 U.S.C. 553(b)(3)(B).

In addition, for the reasons stated above, the FAA finds that good cause exists pursuant to 5 U.S.C. 553(d) for making this amendment effective in less than 30 days, for the same reasons the FAA finds good cause to forego notice and comment.

Comments Invited

The FAA invites you to send any written data, views, or arguments about this final rule. Send your comments to an address listed under ADDRESSES. Include the Docket No. FAA-2021-0509 and Project Identifier AD-2021-00608-E at the beginning of your comments. The most helpful comments reference a specific portion of the final rule, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this final rule because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this final rule.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this AD contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this AD, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked

submissions as confidential under the FOIA, and they will not be placed in the public docket of this AD. Submissions containing CBI should be sent to Alberto Hernandez, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Regulatory Flexibility Act

The requirements of the Regulatory Flexibility Act (RFA) do not apply when an agency finds good cause pursuant to 5 U.S.C. 553 to adopt a rule without prior notice and comment. Because FAA has determined that it has good cause to adopt this rule without prior notice and comment, RFA analysis is not required.

Costs of Compliance

The FAA estimates that this AD affects 2 engines installed on airplanes of U.S. registry.

The FAA estimates the following costs to comply with this AD:

Estimated costs				
Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
Ultrasonic inspection (includes actions necessary to disassemble the engine)	204 work-hours x \$85 per hour = \$17,340	\$0	\$17,340	\$34,680

The FAA estimates the following costs to do any necessary replacements that would be required based on the results of the inspection. The agency has no way of determining the number of aircraft that might need these replacements:

On-condition costs

Action	Labor Cost	Parts Cost	Cost per product
Replace the HPT 1st-stage disk or HPT 2nd-stage disk	0 work-hours x \$85 per hour = \$0	\$300,000	\$300,000

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866, and
- (2) Will not affect intrastate aviation in Alaska.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2021-11-51 International Aero Engines AG: Amendment 39-21626; Docket No. FAA-2021-0509; Project Identifier AD-2021-00608-E.

(a) Effective Date

This airworthiness directive (AD) is effective without actual notice on [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]. Emergency AD 2021-11-51, issued on May 21, 2021, which contained the requirements of this amendment, was effective with actual notice.

(b) Affected ADs

None.

(c) Applicability

This AD applies to International Aero Engines AG (IAE) V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, and V2533-A5 model turbofan engines with:

- (1) A high-pressure turbine (HPT) 1st-stage disk, part number (P/N) 2A5001, with serial number (S/N), PKLBR34908, PKLBR59989, PKLBR83471, PKLBSC9996, PKLBSG0105, PKLBSG9043 or PKLBSh1829, installed; or
- (2) An HPT 2nd-stage disk, P/N 2A4802, with S/N PKLBR87800, PKLBR88708, PKLBR89452, PKLBSA9907, PKLBSh9246, PKLBSC8066, PKLBSC8077, or PKLBSG2213, installed.

(d) Subject

Joint Aircraft System Component (JASC) Code 7250, Turbine Section.

(e) Unsafe Condition

This AD was prompted by a review of investigative findings from an event involving an uncontained failure of an HPT 1st-stage disk that resulted in high-energy debris penetrating the engine cowling. The FAA is issuing this AD to prevent failure of the HPT. The unsafe condition, if not addressed, could result in uncontained HPT failure, release of high-energy debris, damage to the engine, damage to the airplane, and loss of

the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) For affected engines with an installed HPT 1st-stage disk listed in Table 1 to paragraph (g)(1) of this AD, within 10 flight cycles after the effective date of this AD, perform an ultrasonic inspection (USI) of the HPT 1st-stage disk using the Accomplishment Instructions, paragraph 6, of IAE Non-Modification Service Bulletin (NMSB) V2500-ENG-72-0713, Revision 1, dated January 26, 2021 (IAE NMSB V2500-ENG-72-0713).

Table 1 to Paragraph (g)(1) – HPT 1st-Stage Disk with Known Engine Installations

Engine Serial Number	HPT 1st-Stage Disk Serial Number
V11020	PKLBSC9996
V12788	PKLBR59989
V13037	PKLBSH1829
V15159	PKLBR34908
V16796	PKLBSG9043
V16799	PKLBSG0105
V16912	PKLBR83471

(2) For affected engines with an installed HPT 2nd-stage disk listed in Table 2 to paragraph (g)(2) of this AD, within 10 flight cycles after the effective date of this AD, perform a USI of the HPT 2nd-stage disk using the Accomplishment Instructions, paragraph 7, of IAE NMSB V2500- ENG-72-0713.

Table 2 to Paragraph (g)(2) – HPT 2nd-Stage Disk with Known Engine Installation

Engine Serial Number	HPT 2nd-Stage Disk Serial Number
V11901	PKLBSG2213
V12308	PKLBSH9246
V12644	PKLBSC8066
V13111	PKLBR89452
V15434	PKLBR88708
V15737	PKLBSC8077
V16085	PKLBSA9907
V17869	PKLBR87800

(3) If, during the USI required by paragraphs (g)(1) and (2) of this AD, an HPT

1st-stage disk or HPT 2nd-stage disk does not pass the USI as specified in the Accomplishment Instructions, paragraph 8., of IAE NMSB V2500-ENG-72-0713, Revision 1, before further flight, remove the HPT 1st-stage disk or 2nd-stage disk, as applicable, from service and replace with a part eligible for installation.

(h) Definition

For the purpose for this AD, a “part eligible for installation” is:

(1) An HPT 1st-stage disk or HPT 2nd-stage disk listed in Appendix A, Tables 1 and 2, of IAE NMSB V2500-ENG-72-0713, or Appendix A, Tables 1 and 2, of IAE NMSB V2500-E5-72-0015, dated December 15, 2020 (IAE NMSB V2500-E5-72-0015) that has passed the USI as specified in the Accomplishment Instructions, paragraph 8., of IAE NMSB V2500-ENG-72-0713 or NMSB V2500-E5-72-0015, or

(2) An HPT 1st-stage disk or HPT 2nd-stage disk that is not listed in Appendix A, Tables 1 and 2, of IAE NMSB V2500-ENG-72-0713 or Appendix A, Tables 1 and 2, of IAE NMSB V2500- E5-72-0015.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in Related Information. You may email your request to ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(j) Related Information

For more information about this AD, contact Alberto Hernandez, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7329; fax: (781) 238-7999; email: Alberto.J.Hernandez@faa.gov.

(k) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(3) The following service information was approved for IBR on July 13, 2021 (86 FR 30380, June 8, 2021).

(i) IAE Non-Modification Service Bulletin (NMSB) V2500-ENG-72-0713, Revision 1, dated January 26, 2021.

(ii) IAE NMSB V2500-E5-72-0015, dated December 15, 2020.

(4) For International Aero Engines service information identified in this AD, contact International Aero Engines AG, 400 Main Street, East Hartford, CT 06118; phone: (860) 565-2391; email: help24@pw.utc.com; website: <http://fleetcare.pw.utc.com>.

(5) You may view this service information at FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759.

(6) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: fedreg.legal@nara.gov, or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on June 18, 2021.

Lance T. Gant, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.